

Informational Leaflet 42

REPORT OF LIMITED SALMON TAGGING OPERATIONS,
NORTH SIDE ALASKA PENINSULA, 1961

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Objectives

A salmon tagging program was initiated during the summer of 1961 on the north side of the Alaska Peninsula in the Bear River area. Bear River, which is located approximately 15 miles southeast of Port Moller, produces a run of approximately 1/2 million red salmon yearly.

The tagging program was designed to determine the extent of the intermingling of Sandy River, Nelson Lagoon, and Ilnik Lagoon red salmon with those of Bear River during the peak of the Bear River run. The degree of offshore and shoreline movement of these fish also needed investigation.

Tag Release Data

All tagging was conducted during the weekend of July 7, 8, and 9, 1961. Since this was during a closed fishing period, Port Moller purse seiners were available for tagging charter.

Adverse weather conditions prevented tagging off Bear River on July 7. However, Moller Bay was calm and chum salmon milling in the bay were netted and tagged. The weather calmed somewhat on July 8 and 9, and 570 red salmon were tagged in the immediate vicinity of Bear River.

The following summarize the red and chum salmon tag releases both in Bear River and Moller Bay.

| Date of Release | Species | Area of Release | Number Released | Number Recovered | Percent Recovered |
|-----------------|---------|-----------------|-----------------|------------------|-------------------|
| 7/7/61 | Chum | Moller Bay | 46 | 9 | 19.6 |
| 7/7/61 | Red | Moller Bay | 1 | 1 | ---- |

| Date of Release | Species | Area of Release | Number Released | Number Recovered | Percent Recovered |
|-----------------|---------|-----------------|-----------------|------------------|-------------------|
| 7/8, 9/61 | Red | Bear River | 570 | 177 | 31.16 |
| | | | | 90* | 15.85 |
| | | | | TOTAL 267 | 47.01 |

* 90 tagged fish were observed passing by the counting tower at the outlet of Bear Lake; the tags were not recovered.

Chum Salmon Tag Recoveries

Of the nine recovered chum salmon which were tagged in Moller Bay, six were taken in the immediate vicinity of Frank's Lagoon, a small chum salmon producing area. Two were recovered just outside Moller Bay, and the single red salmon which was tagged was recovered near the King Salmon River. One tagged chum salmon was taken in Frank's Lagoon by sport fishing gear. Herendeen and Moller Bays were closed to commercial fishing during most of 1961 (Figure 1).

Red Salmon Tag Recoveries

One hundred sixty-three tagged fish (87.5 percent of the total recovery) were recovered within four days after commercial fishing resumed in the Monday following tagging operations. Of these, 116 were recovered in the immediate vicinity of Bear River (Figure 2).

An additional 90 tagged reds were observed as they passed by the counting tower at Bear Lake. Therefore, a total of 267 or 47.01 percent of the tagged fish were accounted for. It is significant to note that no tagged fish were recovered south of Port Moller or north of Kutuzof Cape.

The following table illustrated the day by day tag recoveries.

| <u>Date</u> | <u>Number Recovered</u> | <u>Percent Recovered</u> |
|---------------|-------------------------|--------------------------|
| 7/10 | 67 | 37.85 |
| 7/11 | 50 | 28.25 |
| 7/12 | 27 | 15.25 |
| 7/13 | 11 | 6.20 |
| 7/14 | 2 | 1.13 |
| 7/15 | 3 | 1.69 |
| 7/17 | 7 | 3.96 |
| 7/18 | 3 | 1.69 |
| 7/19 | 1 | .57 |
| 7/22 | 1 | .57 |
| 8/15 | 2 | 1.13* |
| No date given | 3 | 1.69 |
| TOTAL | 177 | 99.98 |

* Recovered at Bear Lake by hunters.

Analysis of Chum Salmon Tagging

Chum salmon tagging was very limited so no definite conclusions can be drawn from this experiment. However, several hypotheses were advanced and are as follows:

1. Moller Bay appears to be a milling area for chum salmon destined for Frank's Lagoon.

Figure 1. SALMON TAG RECOVERIES BERING SEA

x Red Salmon Recovery Points

o Chum Recovery Points RED SALMON TAGGING SITE

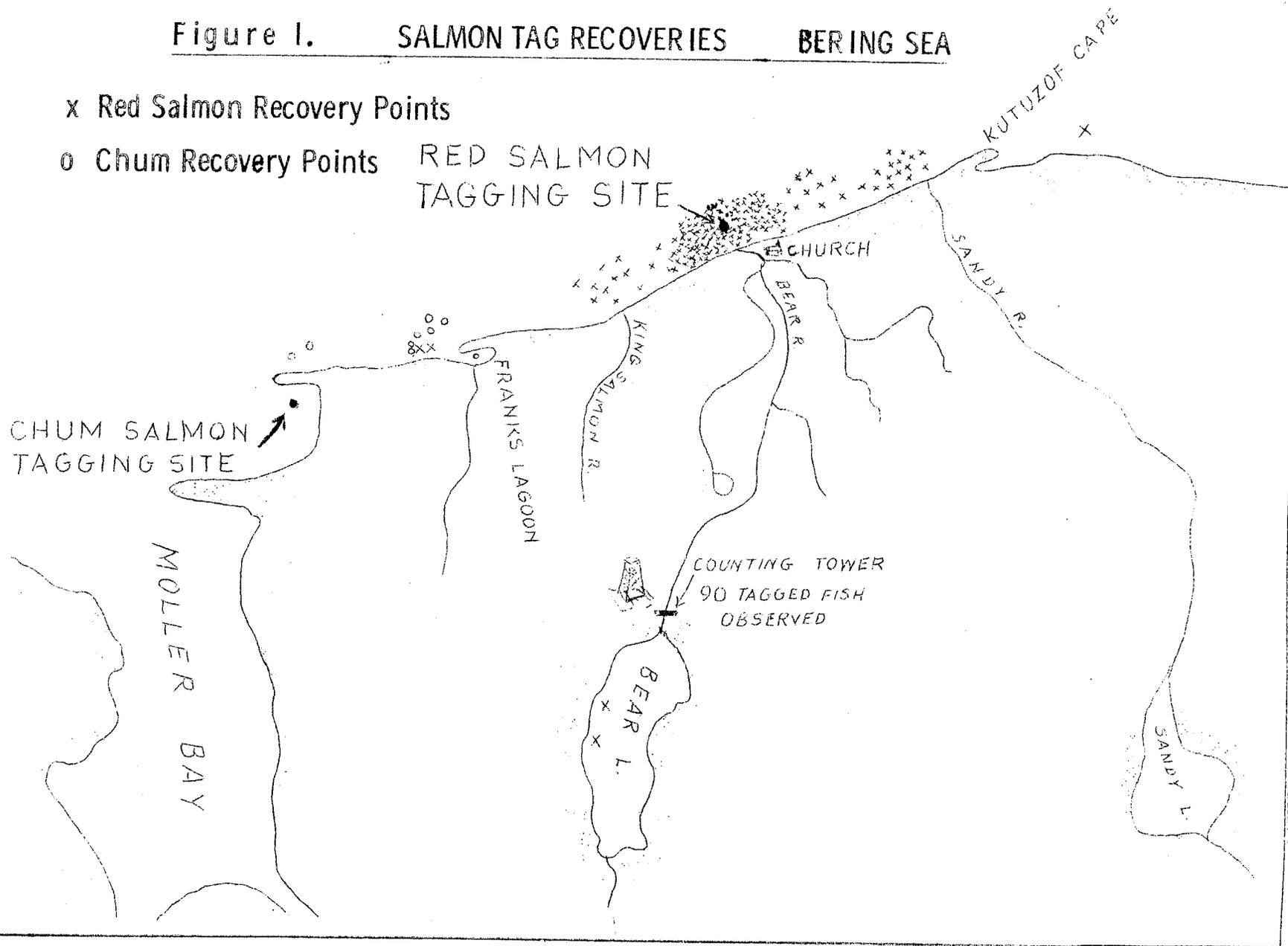
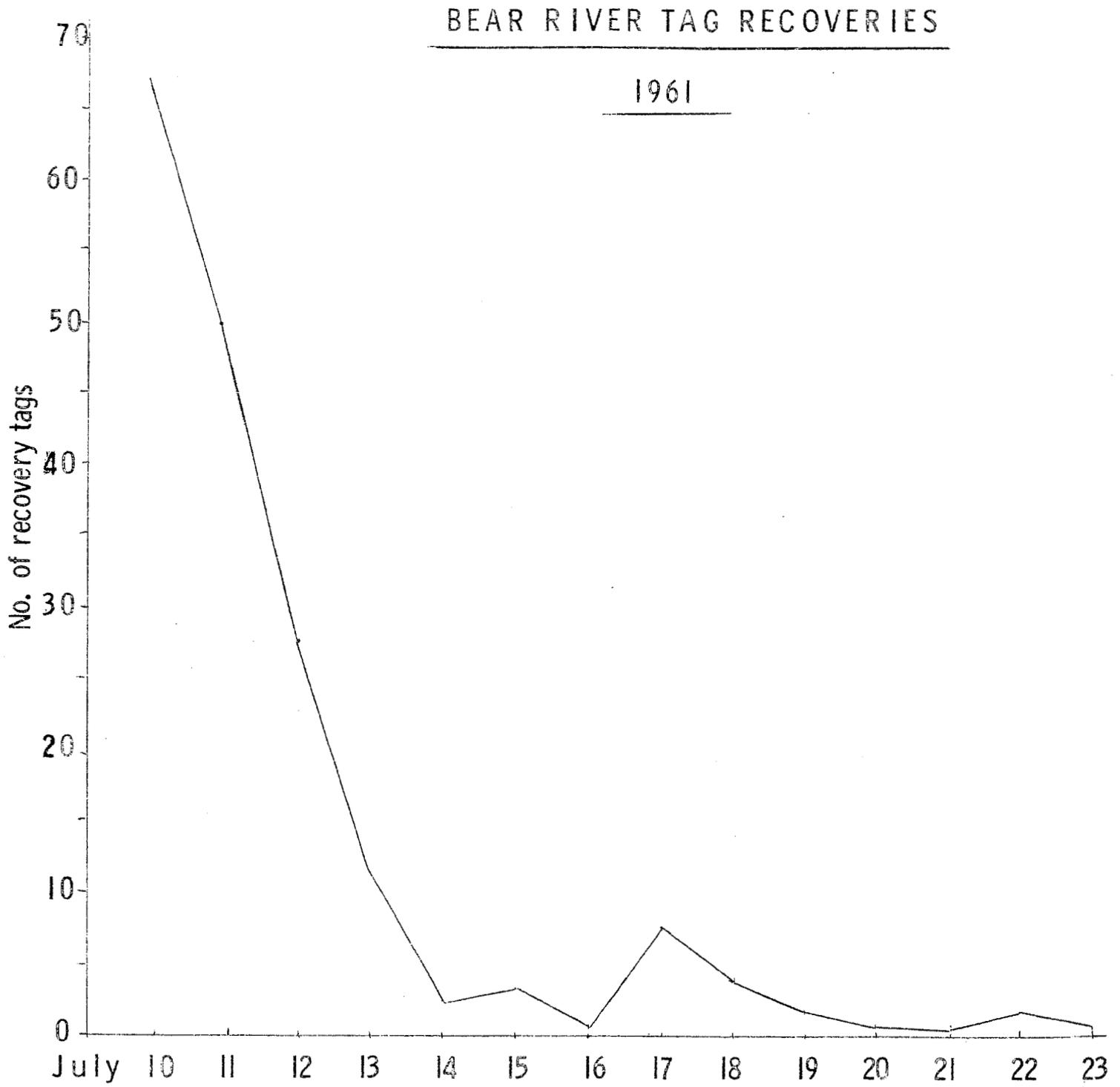


Figure 2



2. No tagged chum salmon were observed or recovered in Moller or Herendeen Bays. No commercial fishery existed in the bay at that time, however streams in the area were surveyed on foot.
3. Chum salmon tagged in front of the Port Moller cannery displayed a seaward movement, and did not appear to intermingle with Moller or Herendeen Bay fish.

Analysis of Red Salmon Tagging

Since this tagging was done on a limited experimental basis, relatively few conclusions were expected. However, detailed analysis does serve to advance the following hypotheses. The reader is cautioned that only a small segment of the run was sampled, and further research may or may not substantiate the results reported here.

1. No recoveries were made in the Sandy River system which indicates little intermingling of the two runs, at least during the tagging period. This was expected since the Sandy River run reaches its peak a week to ten days earlier than Bear River (Figure 3).
2. Almost nothing is known as to the degree of offshore movement, but none was evident from this experiment.
3. Little movement along the shoreline was evident. Tagged fish which displayed shoreline movement dispersed randomly between Sandy River and the King Salmon River. Bear River lies approximately between these two rivers. The tidal effects are probably important when considering shoreline movement off Bear River. The catch and escapement for Bear River are shown in Figure 4.
4. Of the 297 red salmon scales taken during the tagging operation, 73.4% indicated 2 years in fresh water and 3 years in salt water; 5-year-old fish. The following table gives a complete breakdown of the scale analysis.

| Age | Numbers | Percent Composition |
|--------|------------|------------------------|
| 4/2 | 50 | 16.8 |
| 5/2 | 218 | 73.4 |
| 5/3 | 22 | 7.4 |
| 6/2 | 4 | 1.4 |
| 6/3 | 3 | 1.0 |
| TOTALS | <u>297</u> | <u>100.0</u> |

5. Based on recovery information, the sex ratio was 2 females on every male.
6. No intermingling of Nelson Lagoon or Ilnik Lagoon red salmon with those of Bear River was evident.

BEAR RIVER - SANDY RIVER 1961 ESCAPEMENT

Figure 3.

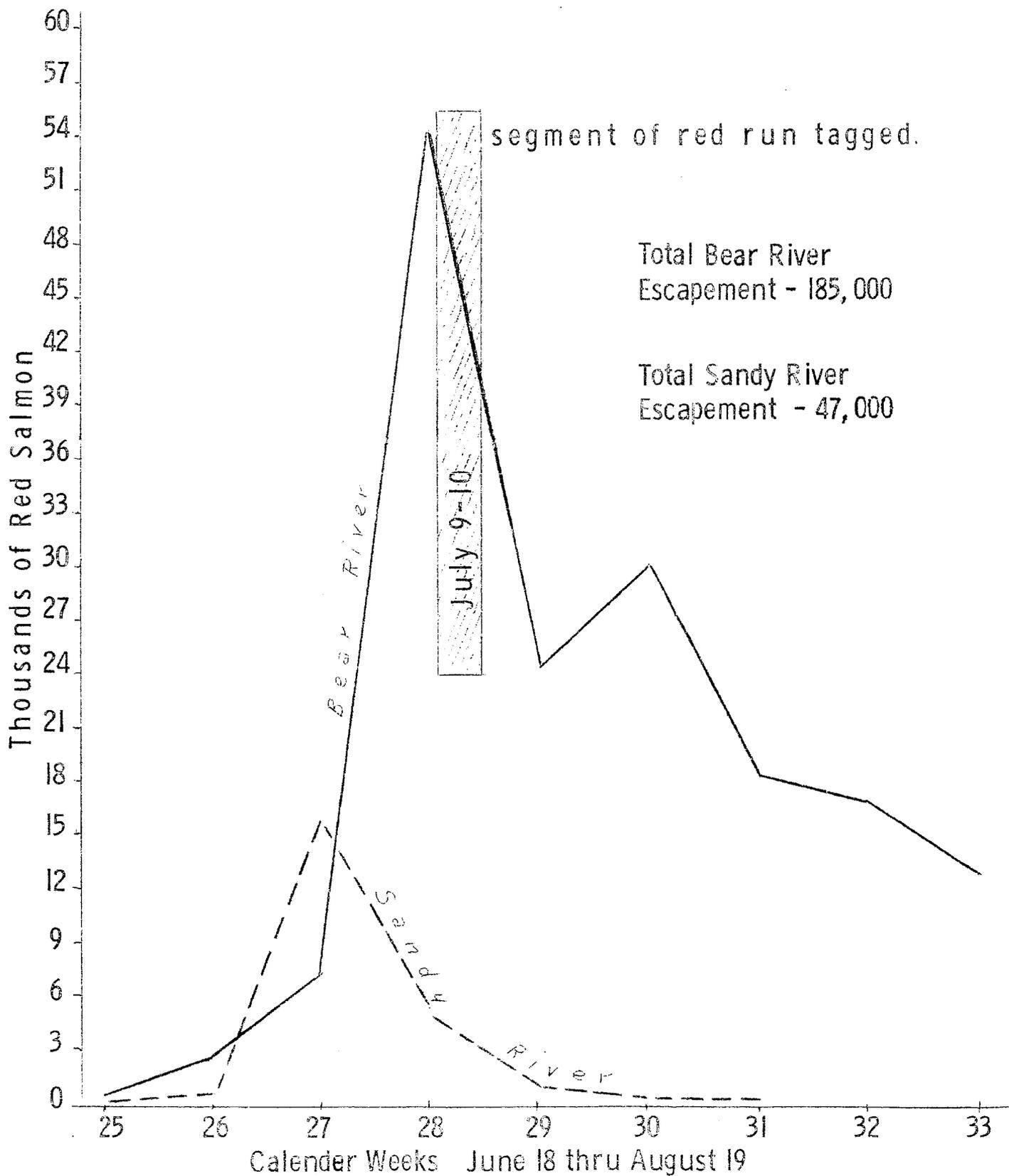
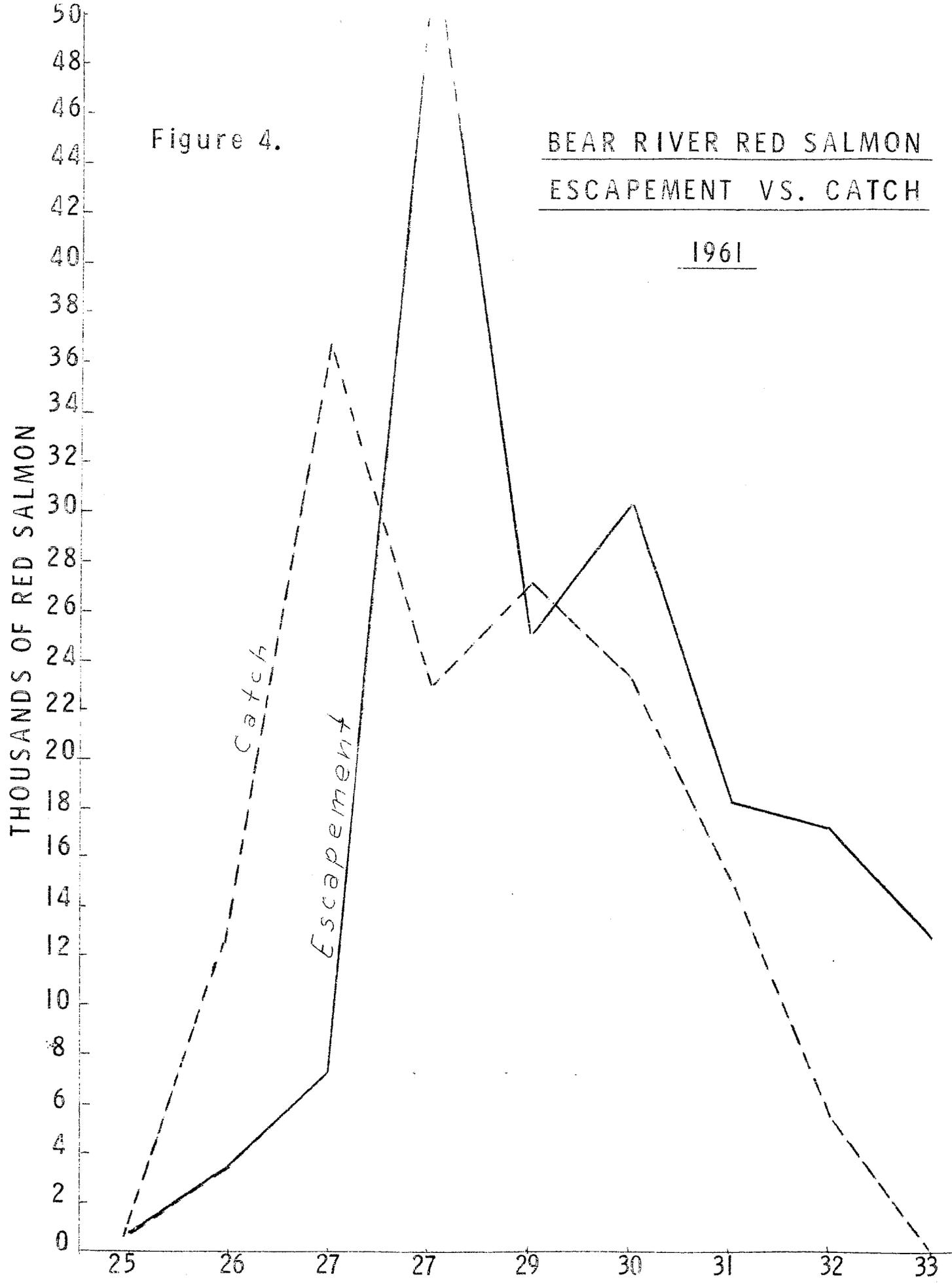


Figure 4.

BEAR RIVER RED SALMON
ESCAPEMENT VS. CATCH

1961



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